# REMARKS

ON CERTAIN

# QUERIES

DELIVERED IN BY

The Rev. Mr. DICKINSON

AT A

MEETING held at *WISBEACH*,

On WEDNESDAY the 5th of *September*, 1770.

BIBLIOTHECA BODLEIANA

By RICHARD DUNTHORNE.

AS it was agreed to tranſmit thoſe Queries to Mr. GOLBORNE and Mr. BRINDLEY, for their Conſideration, it ſeemed unneceſſary for any other Perſon to publiſh his Thoughts thereupon: but as it may now be doubted (from the long Silence of theſe Engineers) whether either of them think the Queries worth their Notice. I have ventured to put together and lay before the Country, ſuch Remarks as occurred to me upon them.

The Deſign of the Queriſt being clearly only to throw cold Water on the Schemes that had been propoſed by the above-mentioned Engineers, for improving the Outfal of Wiſbeach; no wonder if the Queries are couched in ſuch Terms as to be *prima Facie* unanſwerable: I ſhall therefore only endeavour to ſhew, that though the Objections ſhould remain unremoved, they ought not to perſuade any unprejudiced Perſon, that the Plans themſelves are either wholly or in any conſiderable Degree uſeleſs; and that the Matter may be better underſtood, I ſhall ſet down each Query immediately before the Remark upon it.

Query 1. *Will it be practicable to carry the propoſed Cut through the Sands, "to about four or five Hundred Yards above the lower Beacon at the Eye," which according to* Mr. ELSTOB's *Survey is a Space of upwards of two Miles; and what Materials muſt the Banks be formed of, and from whence muſt they be brought, that will make them capable of reſiſting the Force of the Waves in raging Tides and Winds; as it is apprehended that no Banks of Silt or Sand will ſtand in ſuch a Place, and ſo expoſed within and without to the Beat of the Waters: And ſhould not an Eſtimate have been delivered in of the Expence of maintaining the ſaid Banks for twenty Years, to prevent future Applications to Parliament for that Purpoſe?*

*Remark.* Suppoſe it ſhould be found more difficult than theſe Engineers ſuppoſe, (which however from their great Experience will not be readily granted) or even if it be impracticable to carry the propoſed Cut through the Sands ſo near to the Eye as either Mr. BRINDLEY or Mr. GOLBORNE

Golborne proposes, it may be greatly beneficial to both Navigation and Draining, and tend to preserve the Country a series of Years longer, than it can be preserved in the present State of the Outfal, if the Cut was only carried so as to fall into Lutton Leam, below the Ford. And though no steep Banks of Silt or Sand will stand in a Place so exposed to the Beat of the Waters, is the Querist certain that no Banks how wide or flat soever would stand there? If this, or any other large Work depending much upon Contingencies, is to be postponed until a compleat Estimate shall have been made of the Expence of maintaining such Work for twenty Years, I suppose we can expect but few Improvements therein.

Query 2. *Is it* possible *to make the Bottom of the new Cut through the Marshes and Sands "nearly two Feet below the Sea Apron of Guntherpe Sluice," as Mr.* Brindley *describes it, or as he expresst it in another Place, "at a Mean, about twelve Feet within Ground, in order to get a sufficient Quantity of Earth to make a Bank upon each Side;" when it is well known from Experience, that in the Marshes, at a much greater Distance from the Sea, the Silt is extremely quick at about the Depth of seven or eight Feet, and must be much more so when so much nearer to the Sea, and more especially during the Spring Tides?*

*Remark.* If it should be impossible to make the Bottom of the new Cut so deep as Mr. Brindley proposes, a Cut of only seven or eight Feet below Soil, would certainly be much deeper and better than the present shifting Channel is.

Query 3. *Will not a Bridge "over the Cut at the Turnpike-Road, at Sutton Washway," be a great Impediment to the Influx of the Tides, and likewise to the Reflow, and particularly to the Land Floods, and prevent their scouring so much as they otherwise would; and will not that Bridge be detrimental to the Town of Wisbeach, and exceedingly so to the Wisbeach Turnpike-Road, upon which near Eighteen Thousand Pounds have already been expended?*

*Remark.* I suppose it may not be improper to ask, what Right any one has to a Bridge over this Cut, more than to a Bridge over the whole Bay, from Cross-Keys to the Wash-way House.

Query 4. *Supposing the Works completed, is it* possible *that "the low Lands, that now drain by different Sluices into the Wisbeach River," should drain without the Assistance of Engines, as Mr.* Brindley *hath asserted, when it is well known, that the low Lands under the Wisbeach North-side Drainage lie in Murrow Field, and Guybirn Field, and the adjacent Fields, at the Extremity of that Drainage; and that the low Lands under the Leverington and Parson-Drove Drainage lie in Hartfield, Fenhallfield, Popefield, Commonfield, and in Part of Southbinham and Northbinham, almost at the Extremity of that Drainage; and that the low Lands under the Newton and Tid Drainages lie in Newton and Tid Fens, at the utmost Extremities of those Drainages; and it is likewise well known to all Persons, who are sufficiently acquainted with those Places, that no Drains, which would be deep enough to convey the several Waters of the said low Lands, upon a natural Fall, for such a Length of Way as to the End of Shire Drain, could be cut to stand, through such high Lands as they must necessarily pass; and the same Objection holds good with Respect to the Course the Waters take at present to their several Outfals:—and were it otherwise, supposing the Spring Tides to rise at the River's End, in the Manner Mr.* Brindley *describes, or at Wisbeach in the Manner described by Mr* Golborne, *and the Neap Tides only in Proportion, those Tides, together with the Floods in the Winter Time, would be an absolute Impediment to any natural Drainage: and should not Mr.* Brindley *have produced some Authority for such an Assertion, as he hath never viewed the said Lands and Drainages, nor did Mr.* Elstob *ever take any Levels of them for his Direction?*

*Remark.* There seems to be but little in the Reasons given by the Querist, against the low Lands in the Wisbeach North Side, &c. draining naturally if the Works were compleated: for though narrow Drains through the high Lands should not stand deep enough to Drain the low Lands beyond them, it is certain that Drains may be made wide enough to stand any Depth, if their Use will but answer the Expence: and as to the Objection taken from the Spring Tides, that holds only upon the Supposition of no Re-flow for Days together, whereas the highest Flow has commonly the lowest Ebb. However if we allow this Objection all the Weight the Querist supposes it to have, and that the low Lands would not Drain naturally, if these Works were done it is certain they would Drain with much less artificial Strength than is required at present, and so the Scheme be much for their Advantage.

Query 5.

Query 5. *It is ſaid in Mr.* BRINDLEY's *Report, that "the new Cut is to be made a hundred Feet Wide at the Top;" but it is no where ſaid what will be the whole Width of the River, the two Forelands, and the Ground covered by the two Banks; but from the Quantity of the Acres eſtimated to be purchaſed, it may be concluded that the whole is intended to be comprehended within the Space of Three Hundred Feet; and if ſo, will not the Tides and Floods paſſing through ſo looſe a Soil, in the Courſe of ſome Years, be in Danger of undermining the Banks that ſtand ſo near together; and will not an immenſe Expence be incurred on this Account to prevent it; and ſhould not an Eſtimate of the Charge for twenty Years have been made and delivered in, for the Reaſon which is aſſigned under Query* 1. *And if it ſhould be impoſſible to prevent the Channel from widening, and that in ſome Places more, and in ſome leſs, which moſt certainly will happen, will not the Tides ſet one Way, and the Land Floods another, and then will not the Tides lay the Silt in the Flood Channel, and the Floods do the ſame in the Tide Channel; and will not the Banks of Sand ſo raiſed be Impediments to Ships, or any other Veſſels coming up to Wiſbeach, as is the Caſe at preſent in the narrow Channel from Wiſbeach to the River's End?*

*Remark.* I will ſuppoſe (with the Queriſt) that three hundred Feet may be too narrow for the propoſed Cut, Forelands, and Banks: but ſurely this Width is not fairly concluded from the Quantity of Acres mentioned to be purchaſed, as near three Miles of the new Cut, is propoſed to be made through black Sands and unimbanked Marſhes, which (if they muſt be purchaſed at all) cannot be imagined by any one to be worth 25l. or 30l. an Acre, and conſequently are not included in the Quantity of Land, eſtimated by the Engineers, to be bought at that Price: however if the Engineers had plainly propoſed to have comprehended the whole, viz. River, Forelands, and Banks, within the Space of three hundred Feet, we have an Inſtance (not far off) of a larger River with its Banks and Forelands being comprehended within a leſs Space; I mean the preſent Hundred Feet River, from Wellmoor Lake to Denver Sluice; which has for many Years contained all the Land Floods of the Ouze, (a bigger River than the Nene) as well as Tides that often riſe to the Height of 12 or 14 Feet, without any of thoſe Inconveniences the Queriſt ſuppoſes; notwithſtanding that River runs through a conſiderable Depth of Sea Silt, only rendered a little more Compact by Time.

Query 6. *Should it be poſſible to keep the new Cut confined within the Compaſs of one Hundred Feet, will not another Inconvenience follow? It is computed that the Channel from Wiſbeach to the River's End, is for the moſt Part about two Hundred Feet in Width, and that the Banks are at twice the Diſtance from each other, which thoſe of the propoſed new Cut will be; will it not therefore follow, as the Tide flows only for a certain Time, that only about half the Water will flow through it, that would otherwiſe flow up, were it of a proportionable Width with the Channel that is above, and that the Tide will only riſe to about half the Height at Wiſbeach which it would otherwiſe riſe to; and will not this be a Hindrance to the navigating Ships to Wiſbeach: and ſhould the Channel above be contracted to a proportionable Width with the intended new Cut, yet when this is done, may not ſo long and narrow a Channel prove very prejudicial to the Banks above, if it ſhould be choaked up with Silt after a Courſe of dry Years, which may happen through a Want of Land Floods to ſcour it out, and occaſion the Floods in the firſt wet Seaſon to overflow, or break them before the Stoppages can be removed?*

*Remark.* The Height to which the Tides ariſe at ſome Diſtance from the Mouth of a conſiderable River, don't depend ſo much upon the Width of the Channel, as upon the gradual Contraction, nor is the narrowing of the Channel ſo great an Obſtruction to the Flux of the Tides, as the Shallowneſs of it is; inſomuch that if the new Channel be made of a ſufficient Depth, and a little wider at the Mouth than it is farther up, I apprehend the Tides will riſe much higher at Wiſbeach than they do now: and the ſmall Quantity of Land Water this River affords in dry Sea one, is much more likely to keep a narrow than a wide Channel, from being choaked up with Silt at thoſe Times.

Query 7. *Suppoſing the Works to be compleated, and a Bank made acroſs the preſent Channel at the River's End, will not that Part of the Bay, which lies between that Bank and the Mouth of the new intended Cut, in Time be filled up, and recovered from the Sea; and is it not probable, that in forty or fifty Years, and in all likelihood much ſooner, a very great Part thereof will be imbanked; and when that ſhall happen, is it reaſonable to believe, that the Land Floods, without the Aſſiſtance of the Reflow of Tides from thence, will be able to keep open the Eye Channel, which appears at preſent to be in Part filled up; and therefore it is not to be expected, as the Tides run ſo foul upon this Coaſt in ſtormy Weather,*

*ther, that Beds of Sand will ariſe below the Mouth of the new Cut, where now there is deep Water, and that the Sea will be thereby removed further off; and may it not be concluded from hence, that the Scheme now propoſed, which cannot be executed but at a great Expence, is only a temporary Expedient, and that the Advantages expected from it will not be laſting?*

*Remark.* Suppoſing the Works compleated, and the propoſed Dam made, I apprehend that Part of the Bay, which lies between the River's End and the Mouth of the new Cut will be filled up and recovered from the Sea, perhaps in leſs Time than the Queriſt has ſuppoſed: but does it follow from thence, that the Eye Channel, to which all the Land Waters will then be directed with Certainty (great Part whereof now paſs by Tirrington Hole) will filt up the ſooner? For filt up it does now, by the Queriſt's own Confeſſion, and may poſſibly continue to do ſo in ſome Degree afterwards. And though this Scheme ſhould not be of everlaſting Duration, (a Thing not to be looked for amongſt human Inventions) does it follow, that the Benefit will not be durable enough to anſwer the Expence?

Query 8. *Can the Caſe of the River Dee at Cheſter be eſteemed parallel with this under preſent Conſideration, when that River is known to riſe in a mountainous Country, and the Floods in the Winter Time are ſaid to be frequent, and very rapid, and the Fall itſelf at the Ware or Cauſeway juſt above the Bridge at the City of Cheſter, is reported to be about twelve or thirteen Feet, and the new Cut, which is ſcoured thereby, is only ten Miles long; and beſides, the Succeſs of that Scheme is not yet aſcertained, becauſe the whole Effect thereof is not yet experienced, as that Part of the Bed of the Old River, which is not yet embanked, acts as a Reſervoir to receive the Tides, and aſſiſts in ſcouring out the Channel from the Mouth of the new Cut acroſs the Sands to the old Quay, and from thence to Parkgate, and will continue ſo to do till the whole is nearly embanked; an Event probably not at a great Diſtance, when that Aſſiſtance will be wanted: whereas the River Nene does not riſe in ſuch a hilly Country, and goes for the Space of about thirty or ſix and thirty Miles, from near Wanſford to the River's End, thro' a very flat, level Country, before it can enter into the intended new Cut, and therefore will act with very ſmall Force in Proportion to what the Waters of the River Dee muſt do at Cheſter, ſuppoſing the Quantity of Waters to be nearly the ſame, either upon the new Cut, or upon the narrow Channel higher up the River; and therefore it muſt be expected, that in dry Years, ſuch as ſometimes have been known to happen, the Tides will be an Overmatch for the Land Floods, and conſequently will bring with them, and depoſite great Quantities of Silt both in the new Cut and the narrow Channel above; which Circumſtance Mr. Goldborne does not appear to have taken into his Conſideration, when he computed the Surface of low Water at Wiſbeach and Peterborough Bridge, as that Computation ſeems to be built upon a Suppoſition, that no Bars will be formed below the Mouth of the new Cut, and that no Sullage will be brought in by the Tides to choak up the narrow Channel even in the drieſt Years, but what the Land Floods will then be able to ſcour out, which is incredible?*

*Remark.* Though the Nene be not ſo rapid a River as the Dee at Cheſter, yet if the Channel were once fairly opened from Wiſbeach to the Eye, it appears by Mr. Elstobb's Levels, that the Fall would not be ſo ſmall, nor the Current ſo inconſiderable as the Queriſt ſuppoſes. Indeed there is no Doubt, but that this and all other Rivers that are liable to the Influx of foul Tides, will be in a worſe State in dry than in wet Seaſons: but ſurely it does not follow, that either the new Cut or the Channel higher up, will ever be ſo badly filled as the preſent River often is in dry Summers; or ſo as to impede the Paſſage of either Tides or Freſhes near ſo much as the preſent ſhallow Channel does.